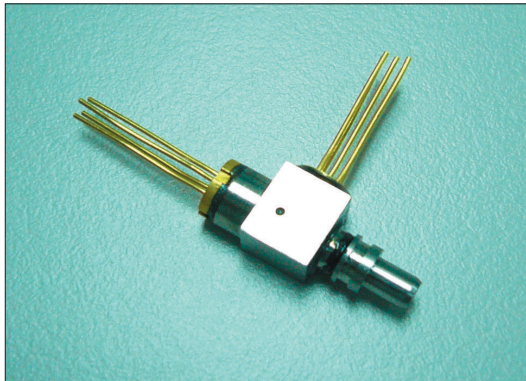


C-13/15-F02-BD-NLCM



Features

- Single fiber bi-directional operation
- Laser diode with multi-quantum- well structure
- Low threshold current
- InGaAs/InP PIN Photodiode with trans-impedance amplifier
- High sensitivity with AGC*
- Differential ended output
- Single +3.3V Power Supply
- Integrated WDM coupler
- Un-cooled operation from -40°C to +85°C
- Hermetically sealed active component
- LC BOSA
- Design for fiber optic networks application

Absolute Maximum Rating (Tc=25°C)

Parameter	Symbol	Value	Unit
Fiber Output Power M	P_f	1.5(M)	mW
LD Reverse Voltage	V_{RLD}	2	V
PIN-TIA Voltage	V_{CC}	4.5	V
Operating Temperature	T_{opr}	-40 to +85	°C
Storage Temperature	T_{stg}	-40 to +85	°C

(All optical data refer to a coupled 62.5/125µm Multimode fiber)

Optical and Electrical Characteristics (Tc=25°C)

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Laser Diode						
Optical Output Power	M	0.5	0.75	1	mW	CW, $I_{th} + 20mA$, kink free
Peak Wavelength	λ	1290	1310	1330	nm	CW, $P_f = P_f(\text{Min})$
Spectrum Width (RMS)	$\Delta\lambda$	-	2	5	nm	CW, $P_f = P_f(\text{Min})$
Threshold Current	I_{th}	-	10	15	mA	CW
Forward Voltage	V_F	-	1.2	1.5	V	CW, $P_f = P_f(\text{Min})$
Rise/Fall Time	t_r / t_f	-	-	0.5	ns	$I_{bias} = I_{th}$, 10% to 90%
Monitor Diode						
Monitor Current	I_m	100	-	-	µA	CW, $P_f = P_f(\text{Min})$, $V_{RPD} = 2V$
Dark Current	I_{DARK}	-	-	0.1	µA	$V_{RPD} = 5V$
Capacitance	C_t	-	6	15	pF	$V_{RPD} = 5V$, $f = 1MHz$
Module						
Tracking Error	$\Delta P_f / P_f$	-1.5	-	1.5	dB	APC, -40 to +85°C
Optical Crosstalk	CRT		< -40		dB	

Note:

- 1.Pin assignment can be customized.
- 2.Specifications subject to change without notice.

Detector $\lambda=1480-1600\text{nm}$

DC Electrical Characteristics($T_c=25^\circ\text{C}$)

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Power Supply	V _{cc}	3.0	3.3	3.6	V	
Differential Output Voltage	V _d	-	-	1	V	
Supply Current (no load)	F02	-	-	35	mA	

AC/Optical and Electrical Characteristics($T_c=25^\circ\text{C}$)

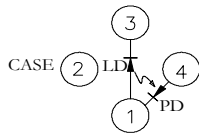
Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Detection Range		1480	1550	1600	nm	-
Gain @ 10 Mbps Differential	G	52	-	70	V/mW	Measure differentially, AC coupled, R _L =50Ω
Bandwidth	BW	120	140	-	MHz	
Saturation Power	P _{sat}	-3	0	-	dBm	BER<10 ⁻¹⁰ @155Mbps PRBS 2 ²³ -1, Er=10dB
Sensitivity	Sens.	-	-37	-35	dBm	BER<10 ⁻¹⁰ @155Mbps PRBS 2 ²³ -1, Er=10dB
Output Resistance	R _{out}	-	50	-	ohm	

Pin Assignment

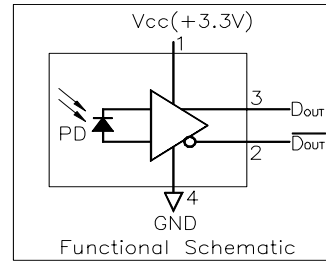
LD Pin Assignment

D Type

- Pin 1 : Laser Anode and Monitor Diode Cathode
- Pin 2 : Case Gnd
- Pin 3 : Laser Diode Cathode
- Pin 4 : Monitor Diode Anode

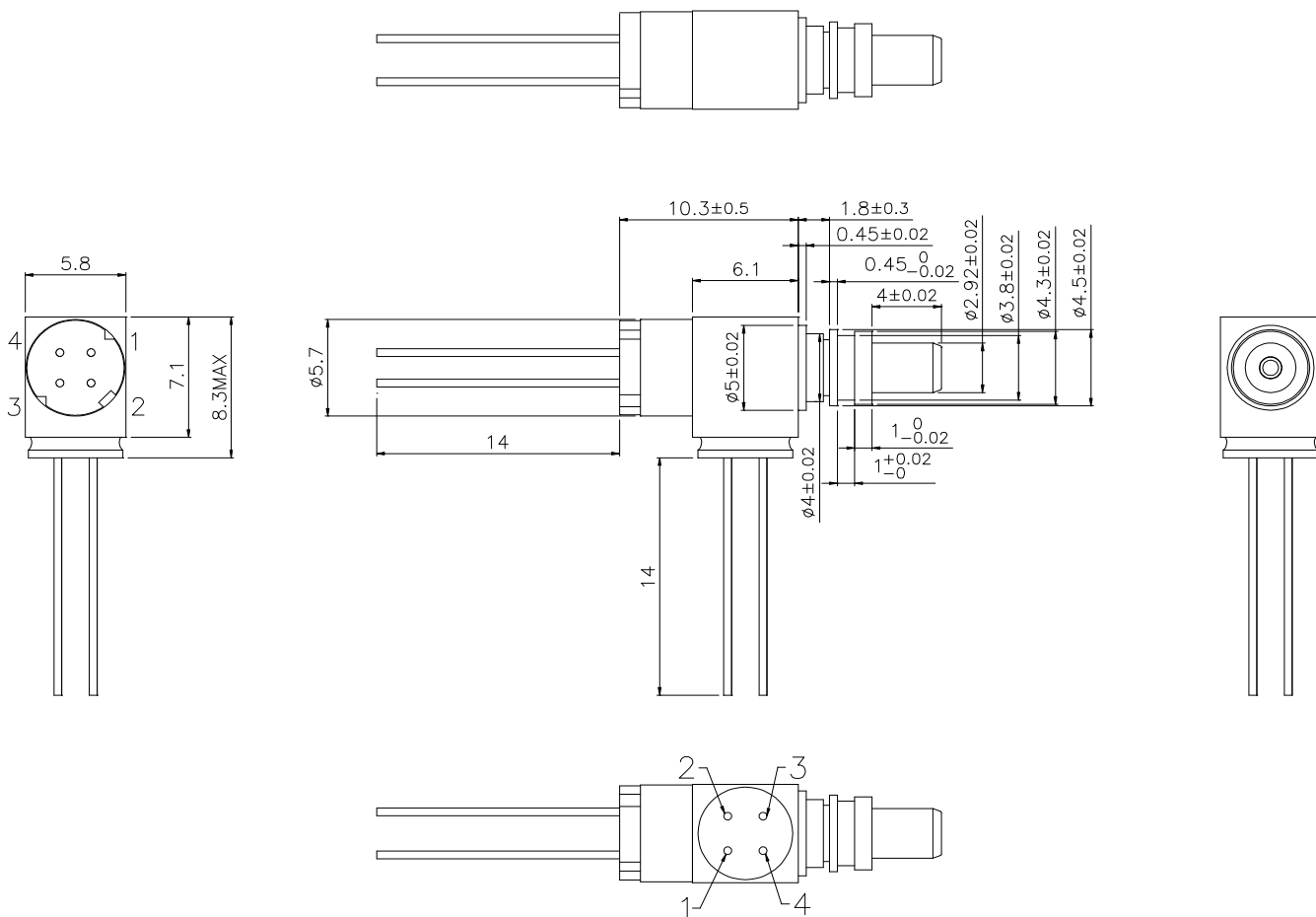


PIN-TIA Pin Assignment



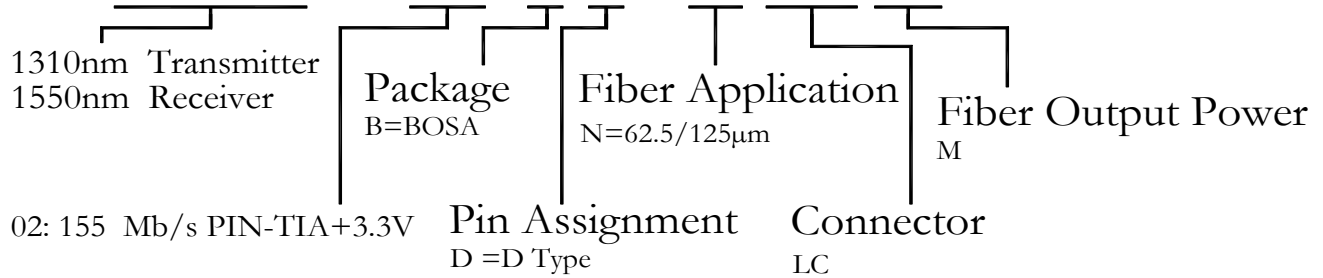
Outline Dimensions

Units in mm.



Ordering Information

C-13/15-F02-BD-NLCM



Warnings

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.
Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

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